FLOODPLAIN AREA
FIELD SAMPLING REPORT

SAUGET AREA 2 SITES
(SITES O, P, Q, R, S)

SAUGET, ILLINOIS

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June 24, 2003

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1.0 INTRODUCTION

In accordance with an Administrative Order of Consent (AOC) between the United States Environmental Protection Agency (USEPA) and the Respondents for the Sauget Area 2 Sites (the Site), a Remedial Investigation and Feasibility Study (RI/FS) was implemented in accordance with an approved Site Sampling Plan (SSP) (dated April 15, 2002). This Floodplain Area Field Sampling Report (FAFSR) describes the field activities that were outlined in the SSP and implemented as part of the RI/FS program. The field activities discussed in this FAFSR were used to collect data necessary to support the completion of the Baseline Ecological Risk Assessment (BERA). Specifically, the objectives of the field activities were to characterize the ecosystem associated with Floodplain portion of the site and to collect data that would be incorporated into the food chain models to be used as part of the BERA. The Floodplain Area field activities were completed between October 7 and October 10, 2002.

2.0 SUMMARY OF SAMPLING PROGRAM

The objective of the BERA is to evaluate the potential for adverse ecological impacts to occur as a result of the exposure of various ecological receptors to constituents of concern that might be present in the Floodplain area of the Site. The Site (Sauget Area 2 Sites) consists of five former disposal areas, Sites O, P, Q, R and S, adjacent, or in close proximity, to the Mississippi River (Figure 1). These five Sites were given letter designations by the Illinois Environmental Protection Agency (IEPA) in the 1980s. Two of these sites, Sites Q and R, are located on the wet side of the floodwall and levee, which is operated and maintained by the United States Army Corps of Engineers and the Metro East Sanitary District. The floodwall is designed to protect the City of East St. Louis and the Villages of Sauget and Cahokia from flooding. Sites O, P and S are located on the dry side of the floodwall and levee.

As per the SSP, field activities to collect ecological information within the Floodplain portion of the Sites to support the preparation of the BERA consisted of two separate events, a reconnaissance survey and the sampling event.

2.1 RECONNAISSANCE SURVEY OBJECTIVES

A reconnaissance survey was conducted in August 2002. The objectives of the reconnaissance survey were to gather information to provide a verbal and photographic description of the sites, finalize sampling locations, procedures, and to determine the number of biota samples that could be realistically collected during the sampling program. Specifically, the reconnaissance survey actions were as follows:

- Photodocument Sites O, P, Q, R, and S.
- Locate previous soil/waste characterization sample locations from the RI to help determine locations for collocated soil and biota samples from each Site.
- Finalize representative receptor species for use as assessment endpoints.

- Conduct a qualitative fauna/flora survey for the sole purpose of site characterization (Appendix C).
- Document direct and indirect (e.g., calls, scat, tracks) observations of terrestrial vertebrates.
- Determine the dominant vegetation species and relative abundance of the species for subsequent sampling.
- Determine the most appropriate sampling techniques.

2.2 FIELD SAMPLING PROGRAM

The sampling program was defined in the Final SSP. The activities included in the sampling program were as follows:

- At surface soil locations utilized as part of the RI/FS field activities, collect vegetation and terrestrial invertebrates (including beetles, crickets, grasshoppers, slugs, snails and lepidopteran larvae) (Appendix C) for chemical analyses of tissues. Vegetation and terrestrial invertebrates were to be collected at each of the RI/FS surface soil locations in Sites O, P, Q, R, and S. As will be discussed in the next item, eight additional surface soil samples were proposed as part of the Floodplain sampling activities with Site Q due to its relatively larger size. Vegetation and terrestrial invertebrates would also be collected at these eight additional sampling locations in Site Q. Concentrations of target analytes in biological tissue will be used in dietary exposure models for selected receptor species for extrapolation to assessment endpoints.

- Collect eight additional surface soil samples (0-6" from the ground surface) from the southern end of Site Q and analyze for standard organic and inorganic parameters (volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides and herbicides, polychlorinated biphenyls (PCBs), dioxins and furans, and metals) outlined in the SSP. Soil sample locations were verified during the field

reconnaissance effort and biased towards areas of viable wildlife habitat. These locations were collocated with vegetation and invertebrate sample locations.

- Collect surface soil samples (0-6") from each vegetation/invertebrate sampling location and submit to a laboratory for a 28-day bioaccumulation test using earthworms (*Eisenia foetida*) provided by the laboratory. At the completion of the test, worms were to be analyzed for tissue residue (Appendix C). Concentrations of target analytes in biological tissue are to be used in dietary exposure models for selected receptor species for extrapolation to assessment endpoints.

- Collect vegetation, invertebrates and surface soil for earthworm tests at offsite locations (Appendix C).

The terrestrial sampling event was conducted from October 7 to October 10, 2002. Figure 2 depicts the Floodplain sampling locations within the five Sites.

2.2.1 VEGETATION SAMPLING

The goal of the vegetation sampling was to collect a sufficient amount of plant matter from the dominant species for chemical analysis at each of the surface soil sampling locations in the five sites. As per the SSP, the sampling protocol for vegetation began with the classification of the vegetation at each location to determine the dominant species for each location. Following that action, sufficient sample material was collected to make a composite sample of 175 to 200 grams for laboratory analysis. Only aboveground portions (stems/leaves/seeds) were collected for chemical analysis. Vegetation was collected using decontaminated stainless steel scissors or shears. The composite was washed with distilled water to remove extraneous soil, placed in a sampling bag, and submitted to the laboratory under proper chain-of-custody procedures for chemical analyses.

A total of twenty-nine vegetation samples were collected (including one duplicate) from the five sites as well as from the off-site areas for background purposes. The vegetation samples were analyzed for SVOCs, pesticides/herbicides, PCBs, dioxins/furans, and metals. Vegetation samples were collected on October 8 and 9, 2002 by removing the plant from the ground by hand or by decontaminated scissors, when necessary. Sample were rinsed with distilled water then placed in containers for shipment to the laboratory under proper chain-of-custody. Samples were weighed to ensure a sufficient amount of plant material was collected. The following is a list of the sample identities, site locations and vegetative species collected (if recorded). The complete vegetative species list can be found in Table 1.

- Site O – Samples: PL-O-1, PL-O-2 and PL-O-3.
- Site P – Samples: PL-P-1, PL-P-2, PL-P-3 and PL-P-4.
- Site Q – Samples: PL-Q-9 (Small White Morning Glory), PL-Q-10 (Johnson Grass), PL-Q-11 (Johnson Grass), PL-Q-12 (Orchard Grass), PL-Q-13 (Orchard Grass), PL-Q-14 (Johnson Grass), PL-Q-15 (White Heath Aster), PL-Q-16, PL-Q-17 (Nettle), PL-Q-18, PL-Q-19 (Jumpseed and various grasses), PL-Q-20 (Jumpseed) and PL-Q-21 (Duplicate of PL-Q-12, Orchard Grass).
- Site R – Samples: PL-R-1, PL-R-2, PL-R-3, PL-R-4 and PL-R-5.
- Site S – Sample PL-S-1.
- Off site areas – Samples: PL-OS-2, PL-OS-3 and PL-OS-4.

2.2.2 INVERTEBRATE SAMPLING

The goal of invertebrate sampling was to obtain sufficient biomass for tissue analysis of the target compounds. A sufficient amount of specimens were to be collected to create a composite sample at each of the locations. The laboratory required approximately 25 grams of sample per sample fraction (i.e., SVOCs, herbicides, pesticides, PCBs, dioxins, metals, lipids) for a total sample of 175 to 200 grams per site. These organisms were to be collected using sweep nets and/or other reasonable sampling methods (Appendix C).

Terrestrial invertebrates (primarily grasshoppers and crickets) were collected from all five sites in the immediate vicinity of each of the sampling points where plant and soil material were collected. The terrestrial invertebrate sampling event was conducted between October 7, 2002 and October 10, 2002. Specimens were collected either by sweep net or by hand. The total mass of terrestrial invertebrates required could not be collected at each sample location. While the collection success was variable based on available habitat (e.g., good habitat in Site Q - poor habitat in Sites R and S), the large amount of invertebrates needed could not be satisfied in the allotted sampling time. Therefore, invertebrate samples were composited within a single site, or in some instances, across several contiguous sites. Compositing was conducted only following concurrence with the USEPA oversight contactor, CH2MHill. Following the compositing, there still remained some sampling areas that did not have sufficient biomass to conduct all of the required analyses. Therefore, analyses of the insect samples were prioritized in the following order: 1) dioxins/furans, 2) PCBs, 3) metals, 4) pesticides/herbicides, and 5) SVOCs.

Table 2 is a complete list of sample identities, composite information and analyses conducted on the samples.

2.2.3 SOIL SAMPLING FOR TARGET ANALYTES

The goal of the soil sampling was to obtain an additional eight samples from Site Q for target analyte analysis. It was determined that an insufficient number of samples had been collected in the past from Site Q to accurately determine the extent of the contamination for such a large area. This sampling event was conducted to fill in these data gaps.

Surface soil (0-6 inches from the ground surface) was collected at each location using a decontaminated stainless steel trowel or shovel. These samples were collected on October 7, 2002 by a representative of URS, the RI/FS contractor for the Site. The collected material was then placed into appropriately-labeled sample jars. The eight samples collected from Site Q were analyzed for VOCs, SVOCs, pesticides/herbicides, PCBs, dioxins/furans and metals. Chain-of-custody forms and sample documentation records were retained by URS.

2.2.4 SOIL SAMPLING FOR EARTHWORM TESTS

The goal of this soil sampling was to obtain a sufficient volume of soil at each of the plant/invertebrate sampling locations for use in a laboratory-designed toxicity/bioaccumulation test using earthworms as the test species. Surface soil (0-6 inch interval) was to be collected at each location using a decontaminated stainless steel trowel or shovel and submitted to the bioassay laboratory.

Twenty-eight surface soil samples were collected for the 28-day earthworm bioaccumulation evaluation for measuring the uptake of SVOCs, pesticides and herbicides, PCBs, dioxins and furans, and metals. The samples were collected with decontaminated trowels on October 7 and 8, 2002 from each of the plant/invertebrate sampling locations, and submitted for testing. The sample identities are listed below.

- Site O – Samples: Soil O-1, Soil O-2 and Soil O-3.
- Site P – Samples: Soil P-1, Soil P-2, Soil P-3, and Soil P-4.
- Site Q – Samples: Soil Q-9, Soil Q-10, Soil Q-11, Soil Q-12, Soil Q-13, Soil Q-14, Soil Q-15, Soil Q-16, Soil Q-17, Soil Q-18, Soil Q-19, Soil Q-20.
- Site R – Samples: Soil R-1, Soil R-2, Soil R-3, Soil R-4, and Soil R-5.
- Site S – Sample: Soil S-1.
- Offsite areas – Samples: Soil OS-2, Soil OS-3, and Soil OS-4.

3.0 OVERVIEW OF FIELD PROGRAM ACTIVITIES

The following section describes in greater detail, the field activities conducted during the implementation of the sampling program in the Floodplain Area.

3.1 DAILY SYNOPSIS

The following section summarizes the general circumstances and activities conducted during the course of the Floodplain Area sampling event:

- Day 1, October 7, 2002. AMEC personnel (Mr. Charles R. Harman and Ms. Christy Calhoun) arrived onsite at the project trailer adjacent to Site R at 0815 hours. The weather was clear and dry with a morning temperature of approximately 40° Fahrenheit (F); the afternoon high temperature was approximately 55° F. A representative from URS (Ms. Brandi Higgins) was introduced, and served as an assistant for the course of the field work. Mr. Peter Barrett and Mr. Andy Sprinkle from CH2Mhill were also introduced. Mr. Sprinkle was designated to serve as the oversight person for the field activities. Mr. Barrett departed following a review of the field protocols. The field activities included the collection of the eight surface soil samples from Site Q, setting insect traps, and characterizing the vegetative communities. The collected surface soil samples were shipped to the appropriate analytical laboratories at the end of the field sampling effort.

- Day 2, October 8, 2002. Representatives from AMEC, URS, and CH2MHill met at the project trailer adjacent to Site R at 0745 hours. The weather was cloudy and dry with a morning temperature of approximately 40° F; the afternoon high temperature was approximately 55° F. The field activities included collecting the vegetative, terrestrial invertebrate, and earthworm bioaccumulation samples; and characterizing the vegetative communities at various locations throughout the site. The collected samples were shipped to the appropriate analytical laboratories at the end of the field sampling effort.

- Day 3, October 9, 2002. Representative of AMEC, URS, and CH2MHill met at the project trailer adjacent to Site R at 0730 hours. The weather was partly cloudy and dry with a morning temperature of approximately 45° F; the afternoon high temperature was approximately 55° F. The field activities included collecting vegetation, terrestrial invertebrate, and earthworm bioaccumulation samples; and characterizing the vegetative communities at various locations throughout the site. The collected samples were shipped to the appropriate analytical laboratories following the field sampling effort.

- Day 4, October 10, 2002. Representatives of AMEC, URS, and CH2MHill met at the project trailer adjacent to Site R at 0730 hours. The weather was partly cloudy and dry with a morning temperature of approximately 45° F; the afternoon high temperature was approximately 60° F. The field activities included collecting terrestrial invertebrate samples and characterizing the vegetative communities at various locations throughout the site. The collected samples were shipped to the appropriate analytical laboratories following the field sampling effort.

3.2 DESCRIPTION OF THE SAMPLING LOCATIONS

The evaluation points for the collection of the ecological data from the Floodplain Area coincided with the surface soil sampling locations utilized in the RI/FS sampling program. An ecological description of each of the sampling points follows:

- Site P-1. This location contained an area of cinders and debris. The habitat at this site was dominated by partridge pea (*Cassia fasciculata*), white heath aster (*Aster pilosus*), common mullein (*Verbascum thapsus*), and eastern cottonwood (*Populus deltoides*);

- Site P-2. The habitat at this location was dominated by Johnson grass (*Sorghum halepense*), smooth sumac (*Rhus glabra*) and crown vetch (*Coronilla varia*);

- Site P-3. The habitat in this area was similar to that of P-2. The predominant vegetative species were crown vetch, white heath aster and Johnson grass;

- Site P-4. The vegetative community at this location was dominated by Johnson grass, tall goldenrod (*Solidago altissima*), slender bush clover (*Lespedeza virginica*), jimsonweed (*Datura stramonium*) and smooth brome (*Bromus inermis*);

- Site O-1. The vegetative community in this area was dominated by Johnson grass and other herbaceous species;

- Site O-2. The habitat at this location was characterized as a tall shrub and grassy environment, dominated by smooth sumac, tall goldenrod, partridge pea, Johnson grass, tall thoroughwort (*Eupatorium altissimum*), slippery elm (*Ulmus rubra*) and poison ivy (*Toxicodendron radicans*). Other species found in this area included Tartarian honeysuckle (*Lonicera tartartica*) and mature eastern cottonwoods;

- Site O-3. The habitat in this area was dominated by grasses, shrubs and herbs such as Tartarian honeysuckle, common mullein, Johnson grass, and barnyard grass (*Echinochloa crusgalli*), as well as some mature eastern cottonwoods;

- Site S-1. The habitat at this location was dominated by mature cottonwoods, white mulberry (*Morus alba*), American elm (*Ulmus americana*), and black locust (*Robinia pseudo-acacia*). Herbaceous species in this area included Johnson grass, fowl meadowgrass (*Glyceria striata*), common pokeweed (*Phytolacca americana*), and Indian grass (*Sorghastrum nutans*). Other species present included Tartarian honeysuckle and trumpet creeper (*Campsis radicans*);

- Site Q-9. This site contained a cleared area dominated by vines encircled on three sides by black willow (*Salix nigra*), and eastern cottonwoods.

- Sites Q-10. This sampling location was dominated by Johnson grass;

- Site Q-13. The habitat at this sampling location was dominated by white mulberry, Johnson grass and scattered eastern cottonwoods;

- Site Q-11. The habitat at this sampling location was dominated by Johnson grass and bushy bluestem (*Andropogon glomeratus*);

- Site Q-12. This habitat at this sampling location was a grassy community dominated by Johnson grass, barnyard grass and common clotbur (*Xanthium chinense*). Samples labeled Q-21 were duplicates of Q-12;

- Site Q-14. The habitat at this sampling location was dominated by Johnson grass, common clotbur, white heath aster and occasional stands of young black willows;

- Site Q-15. The habitat within this sampling location was dominated by herbaceous species such as white heath aster, common clotbur, and small white morning glory (*Ipomoea lacunose*). Isolated black willows were also present;

- Site Q-16. This site contained an early successional forest dominated by black willow, eastern cottonwood and stiff dogwood (*Cornus foemina*). There was limited understory at this site;

- Site Q-17. The habitat at this sampling location was dominated by silver maple (*Acer saccharinum*), with a clearing containing tall goldenrod;

- Site Q-18. The habitat at this sampling location was consisted of a white mulberry grove and white ash (*Fraxinus americana*);

- Sites Q-19 and Q-20. The habitat within these two sampling locations included a row of common clotbur, small white morning glory and northern dropseed (*Sporobolus heterolepis*) alongside of the right-of-way. A forested area was located behind the right-of-way that included black willow, eastern cottonwood and wild cucumber (*Echinocystis lobata*);

- Site R. Site R is an open field surrounded on all four sides by fencing and dominated by various grasses;

- Site OS-2. This site was located east of Site O and east of a set of railroad tracks in a fallow field that had been mowed. The area was dominated by various grasses;

- Site OS-3. This site was located southeast of Site O in the corner of a fence in a fallow field that had been mowed. The area was dominated by various grasses; and

- Site OS-4. This site was located just east of the southern corner of Area Q, this sampling area was bordered by a road to the southwest, a dike to the northwest and a soybean field to the east. Various grasses dominated the area.

Wildlife was also observed either visually or indirectly via calls. The list of species documented as being on site is as follows:

- Gray catbird (*Dumetella carolinensis*), American crow (*Corvus brachyrhynchos*), redwinged blackbird (*Agelaius phoeiceus*), mourning dove (*Zenaida macroura*), black-capped chickadee (*Parus atricapillus*), American kestrel (*Falco sparverius*), red shouldered hawk (*Buteo jamaicensis*), Carolina wren (*Thryothorus ludovicianus*), eastern phoebe (*Sayornis phoebe*), great blue heron (*Ardea herodias*), great egret (*Casmerodius albus*) and American robin (*Turdus migratorius*).

4.0 DEVIATIONS FROM THE SAMPLING PLAN

The following is a list of significant deviations from the sampling plan and the scientific reasoning for the deviations.

- In the original addendum to the sampling plan, the text stated that the earthworm tests were to be conducted for 14 days. However, the toxicity/bioaccumulation tests ran for 28 days as there are no accepted 14-day earthworm test protocols. This was simply an oversight in the text and should have read "28-day earthworm toxicity/bioaccumulation test". Therefore, no effect on the integrity of the study will result in this deviation.

- The sampling plan had called for the collection of terrestrial invertebrate samples at each of the surface soil sampling locations. However, because of a lack of sufficient biomass, some compositing and prioritization of analyses had to be performed. As this information was being utilized solely to feed more site-specific information into the food chain models, the assumption of similarity of insect tissue residues should not bias or affect the outcome of the food chain modeling.

FIGURES

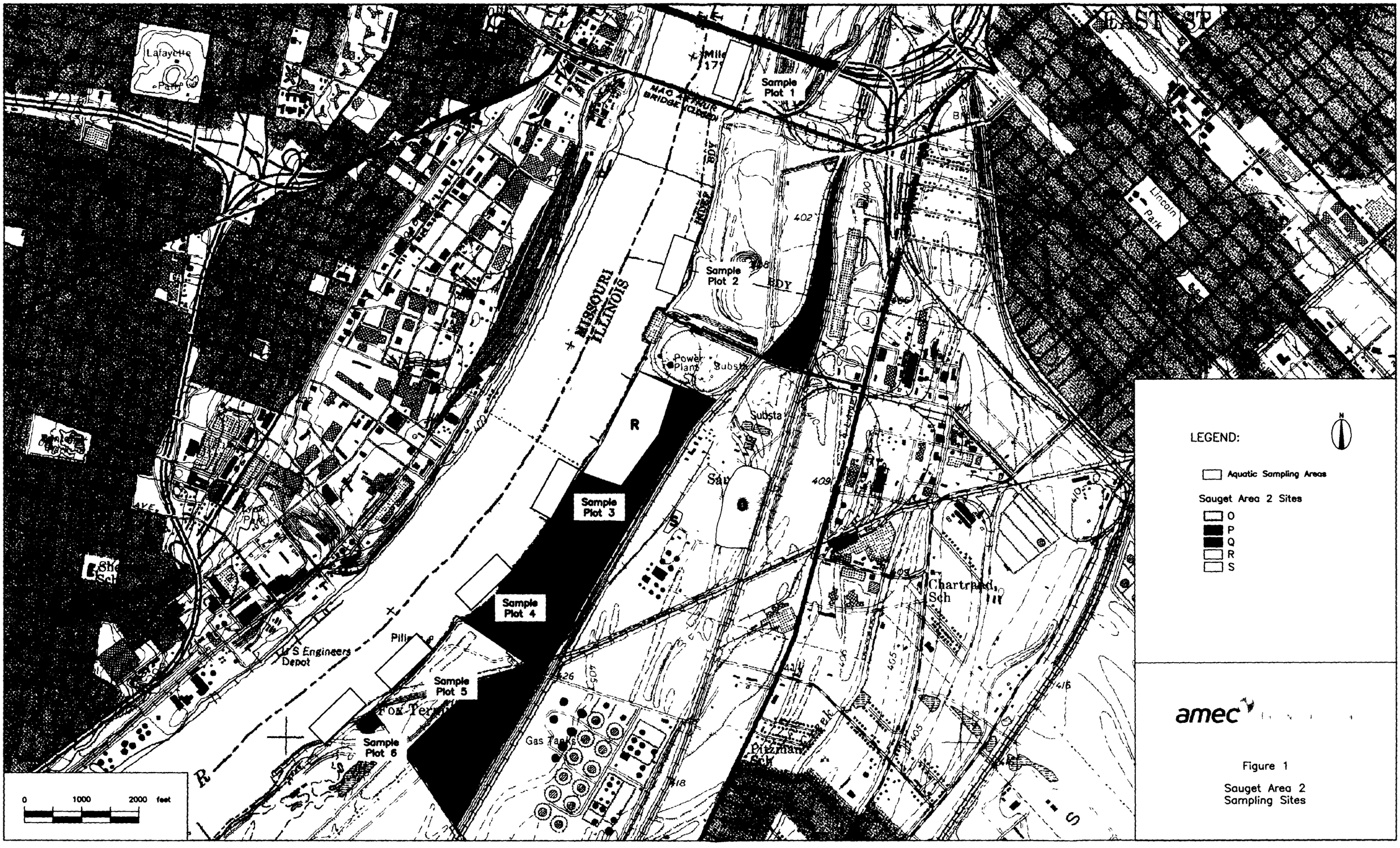
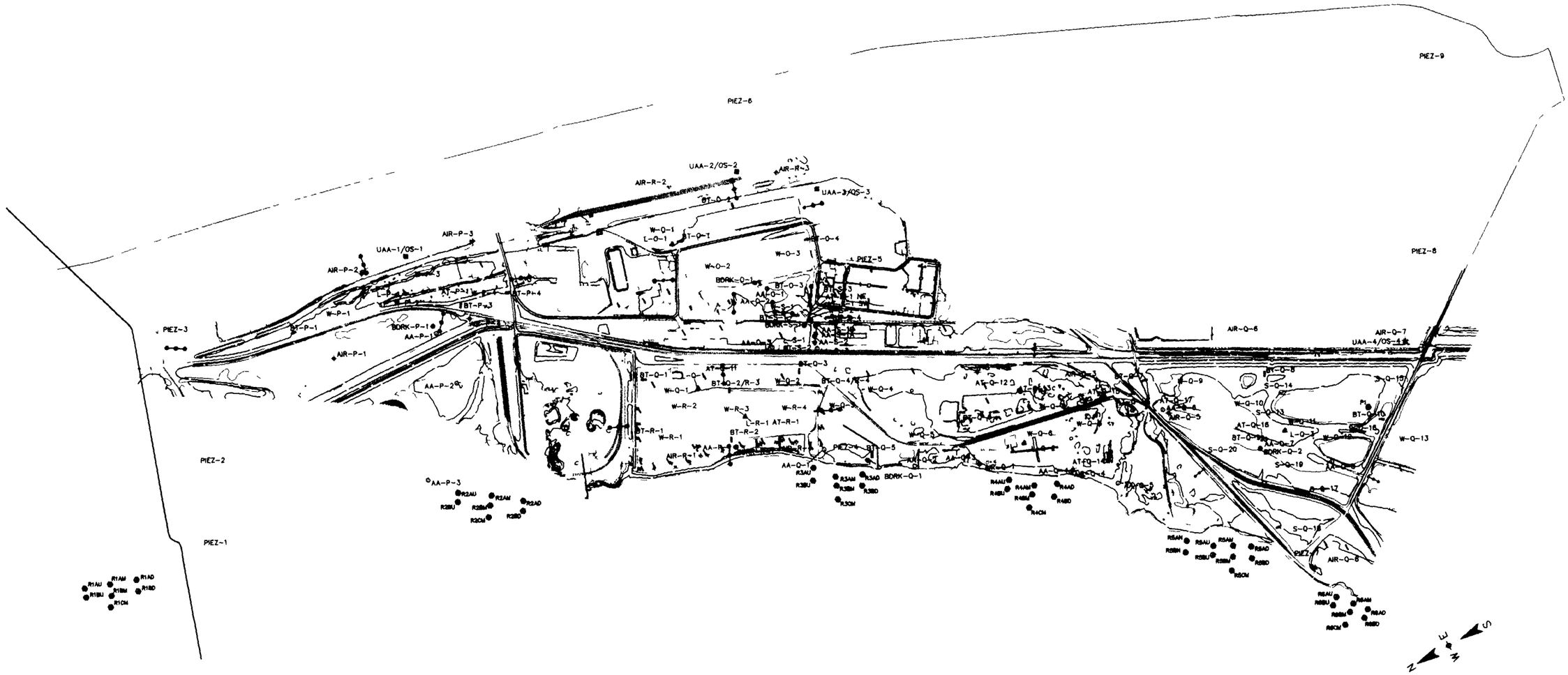


Figure 1

Sauget Area 2
Sampling Sites



LEGEND

- ■ Offsite Soil and Upgradient/Groundwater Sampling Locations
- ⊙ Site-Related Groundwater Sampling Locations
- ⊕ Bedrock Monitoring Well
- ▲ Piezometer Cluster
- Air Sampling Location
- ▬ Boundary Trench Location
- Anomaly Trench Location
- Waste Characterization Boring Location
- ◬ Leachate Monitoring Well Location

Note: Data from Area 1 background locations will also be considered as background for Area 2

SAUGET AREA 2
SAUGET ILLINOIS

Figure 2

Sauget Area 2 Sampling Locations

Date	Project Number	Scale
3/18/03	1-7305-0000	AS SHOWN
Source: URS	Checked by:	Sheet Number:

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TABLES

TABLE 1

SAUGET AREA 2 VEGETATIVE SPECIES LIST	
Common Name	***Scientific Name***
Trees	
Ash, Wafer	*Ptelea trifoliata*
Ash, White	*Fraxinus americana*
Boxelder	*Acer negundo*
Cottonwood, Eastern	*Populus deltoides*
Elm, American	*Ulmus americana*
Elm, Slippery	*Ulmus rubra*
Locust, Black	*Robinia pseudoacacia*
Maple, Silver	*Acer saccharinum*
Mulberry, White	*Morus alba*
Sumac, Smooth	*Rhus glabra*
Walnut, Black	*Juglans nigra*
Willow, Black	*Salix nigra*
Shrubs and Vines	
Creeper, Trumpet	*Campsis radicans*
Cucumber, Wild	*Echinocystis lobata*
Dogwood, Gray	*Cornus foemina*
Dogwood, Silky	*Cornus amomum*
Grape	*Vitis sp.*
Honeysuckle, Tartarian	*Lonicera tartarica*
Ivy, Poison	*Rhus radicans*
Wildflowers	
Artichoke, Jerusalem	*Helianthus tuberosus*
Aster, White Heath	*Aster pilosus*
Beardtongue, White	*Penstemon digitalis*
Bush Clover, Slender	*Lespedeza virginica*
Camphorweed	*Heterotheca subaxillaris*
Cleavers	*Galium aparine*
Clotbur, Common	*Xanthium chinense*
Dodder, Common	*Cuscuta gronovii*
Evening Primrose, Common	*Oenothera biennis*
Fog Fruit, Northern	*Phyla lanceolata*
Goldenrod, Canada	*Solidago canadensis*

SAUGET AREA 2 VEGETATIVE SPECIES LIST	
Common Name	***Scientific Name***
Wildflowers (cont.)	
Goldenrod , Late (Giant)	*Solidago gigantea*
Goldenrod, Tall	*Solidago altissima*
Hawkweed	*Hieracium gronovii*
Horseweed	*Erigeron canadensis*
Jimsonweed	*Datura stramonium*
Knotweed (Jumpseed), Virginia	*Polygonum virginianum*
Lady's Thumb	*Polygonum persicaria*
Milkweed, Common	*Asclepias syriaca*
Morning Glory, Ivy-Leaved	*Ipomoea hederacea*
Morning Glory, Small Red	*Ipomoea coccinea*
Morning Glory, Small White	*Ipomoea lacunose*
Mullein, Flannel Plant	*Verbascum thapsus*
Nettle, Tall	*Urtica procera*
Pea, Partridge	*Cassia fasciculata*
Pokeweed	*Phytolacca americana*
Ragweed, Common	*Ambrosia artemisiifolia*
Ragweed, Giant	*Ambrosia trifida*
Snakeroot, White	*Eupatorium rugosum*
Sneezeweed	*Helenium autumnale*
Sunflower, Tickseed	*Bidens aristosa*
Thoroughwort, Tall	*Eupatorium altissimum*
Tick Trefoil, Panicled	*Desmodium paniculatum*
Vetch, Crown	*Coronilla varia*
Water Pepper	*Polygonum hydropiper*
Grasses, Sedges, Rushes	
Brome, Smooth	*Bromus inermis*
Bluestem, Bushy	*Andropogon gerardi*
Dropseed, Tall	*Sporobolus heterolepis*
Fowl Meadowgrass	*Poa palustris*
Foxtail, Meadow	*Alopecurus pratensis*
Grass, Barnyard	*Echinochloa crusgalli*
Grass, Indian	*Sorghastrum nutans*
Grass, Johnson	*Sorghum halepense*
Grass, Manna	*Glyceria obtusa*
Grass, Orchard	*Dactylis glomerata*
Sedge, Box	*Carex lurida*
Sedge, Umbrella	*Cyperus strigosus*

TABLE 2

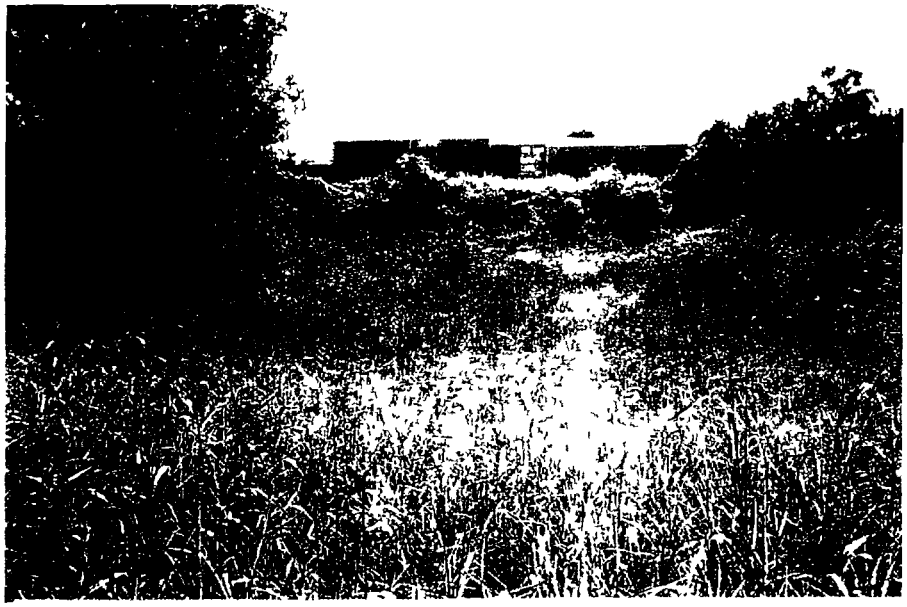
TERRESTRIAL INVERTEBRATE SAMPLING MATRIX		
Sample Name	Composite of Sites:	Analyses
IN-Q1	Q-9, Q-10, Q-13, Q-17, Q-18, Q-19 and Q-20	dioxins/furans, SVOCs, metals, pesticides/herbicides, PCBs
IN-Q2	Q-11, Q-12, Q-14, Q-15 and Q-16	dioxins/furans, SVOCs, metals, pesticides/herbicides, PCBs
IN-OS1	Offsite areas OS-2, OS-3 and OS-4	dioxins/furans
IN-ROS1	O-1, O-2, O-3, R-1, R-2, R-3, R-4, R-5, S-1	dioxins/furans, metals, PCBs
IN-P1	P-1, P-2, P-3, P-4	dioxins/furans, metals, PCBs

APPENDIX A

PHOTOGRAPH LOG

SITE P

Photograph 1 Vicinity Sampling Site P-1



Photograph 2 Vicinity Sampling Site P-2

Photograph 3: Vicinity Sampling Site P-3

Photograph 4: Vicinity Sampling Site P-4

SITE O

Photograph 5: Sampling Site O-1

Photograph 6: Sampling Site O-2

Photograph 7 Sampling Site O-3

Photograph 8 Vicinity Site O

Site Q

Photograph 9 Sampling Site Q 9

Photograph 10 Sampling Site Q-10

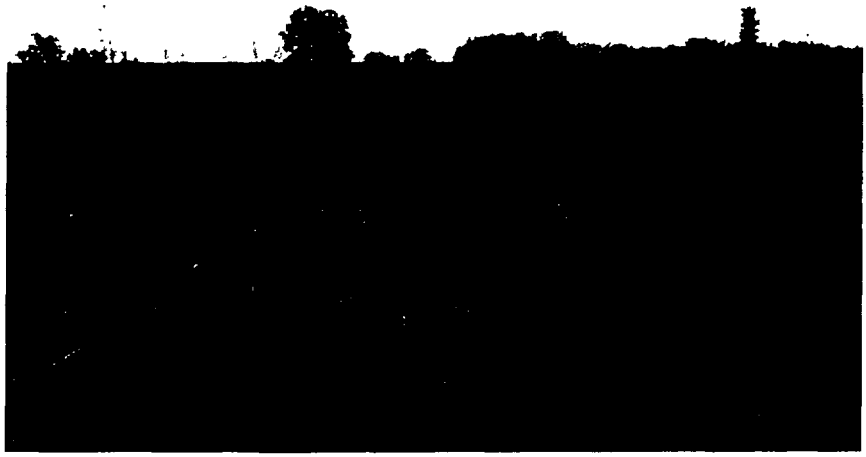
Photograph 11 Sampling Site Q-10

Photograph 12 Sampling Site Q-10

Photograph 13: Sampling Site Q-11

Photograph 14: Sampling Site Q-12

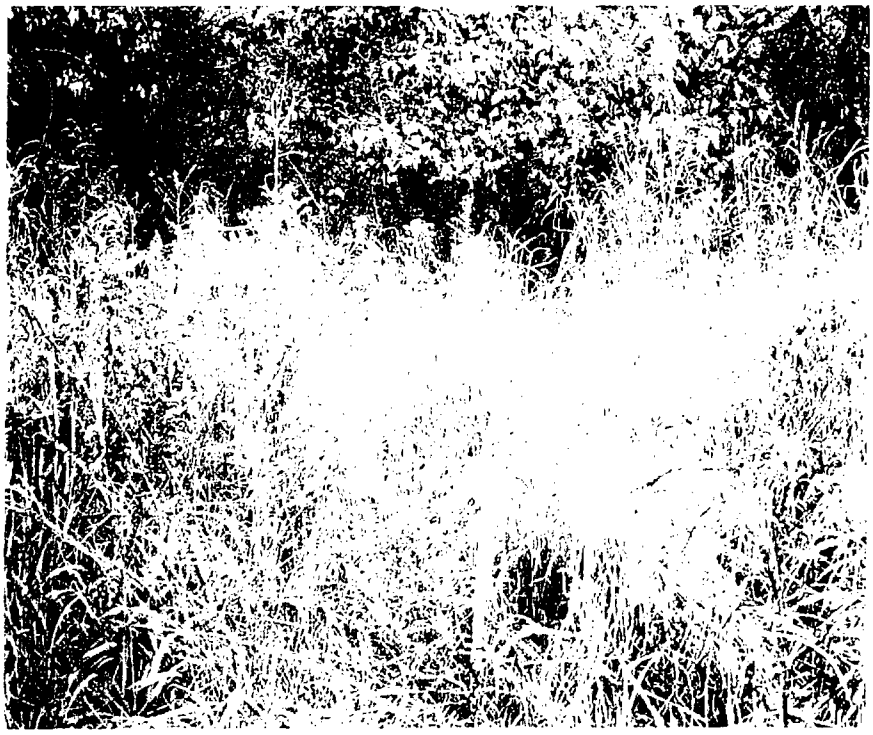
Photograph 15: Sampling Site Q-12



Photograph 16: Sampling Site Q-12

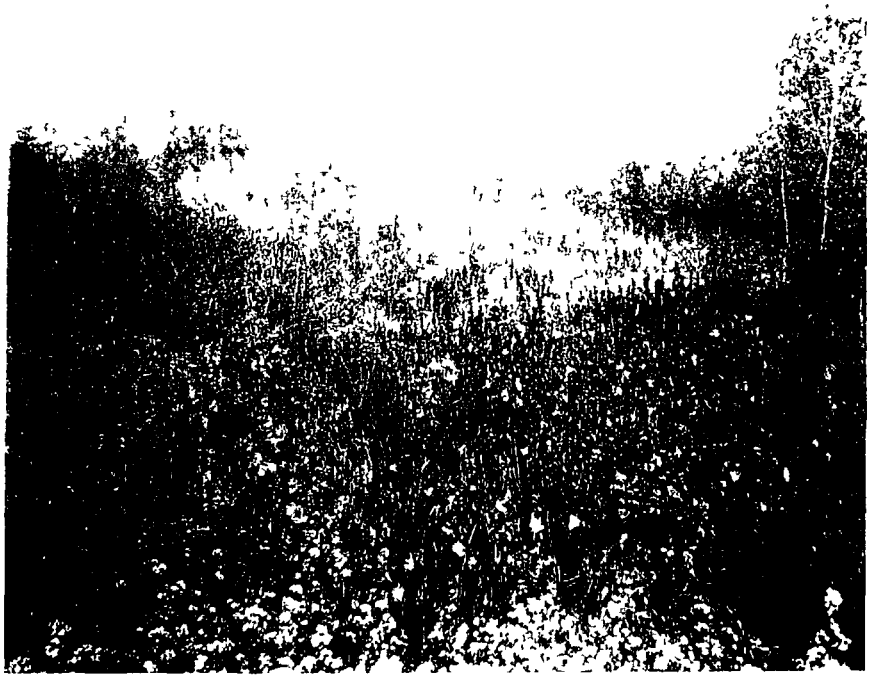
Photograph 17 Sampling Site Q-12

Photograph 18 Sampling Site Q-12



Photograph 19: Sampling Site Q-13

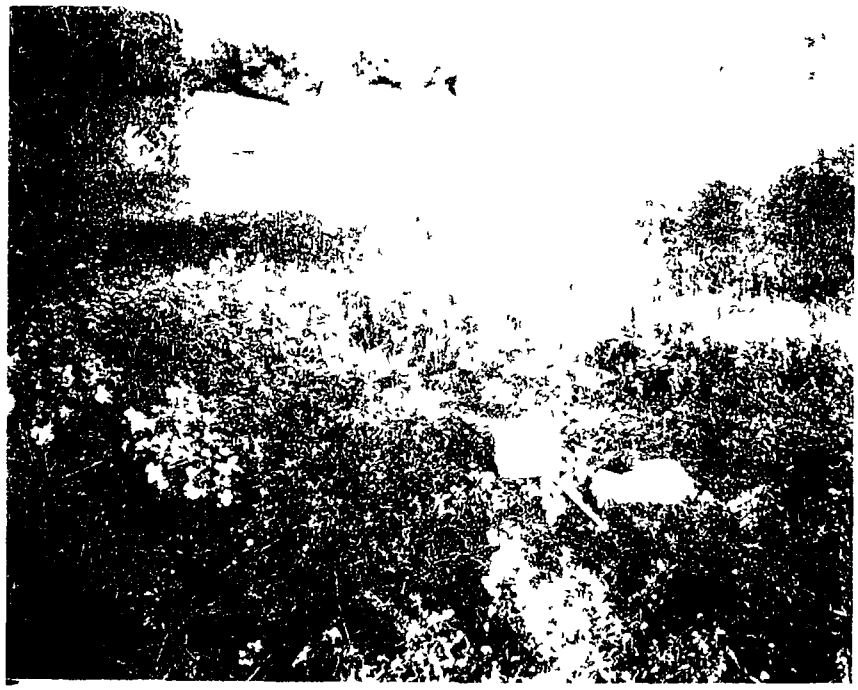
Photograph 20: Sampling Site Q-13



Photograph 21 Sampling Site Q-14

Photograph 22 Sampling Site Q-14

Photograph 23 Sampling Site Q-14



Photograph 24 Sampling Site Q-15

Photograph 25: Large Pond From Vicinity Sampling Site Q-16

Photograph 26: Large Pond From Vicinity Sampling Site Q-16

Photograph 27: Large Pond From Vicinity Sampling Site Q-16

Photograph 28: Large Pond From Vicinity Sampling Site Q-16

Photograph 29 Large Pond

Photograph 30: Sampling Site Q-17

Photograph 31 Sampling Site Q-18

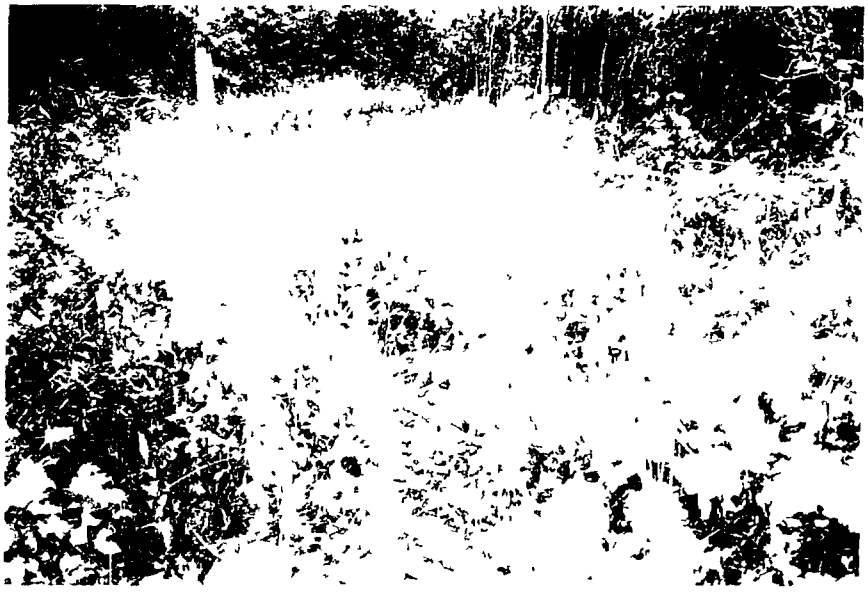
Photograph 32. Sampling Site Q-18

Photograph 33 Sampling Site Q-18

Photograph 34 Sampling Site Q-19

Photograph 35 Sampling Site Q-19

Photograph 36 Sampling Site Q-19



Photograph 37 Sampling Site Q-19

Photograph 38 Sampling Site Q-20

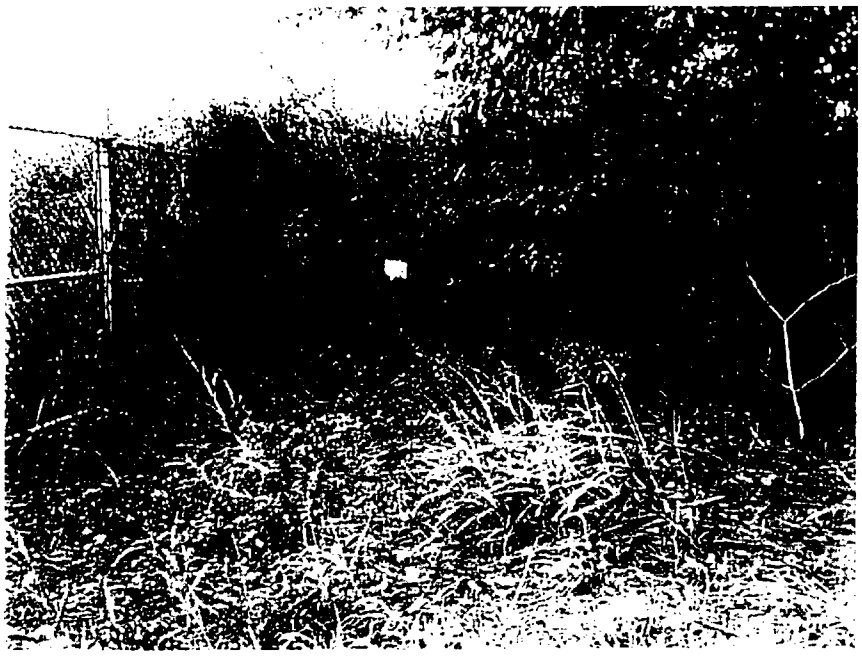
Photograph 39: Sampling Site Q-20

Photograph 40: Sampling Site Q-20

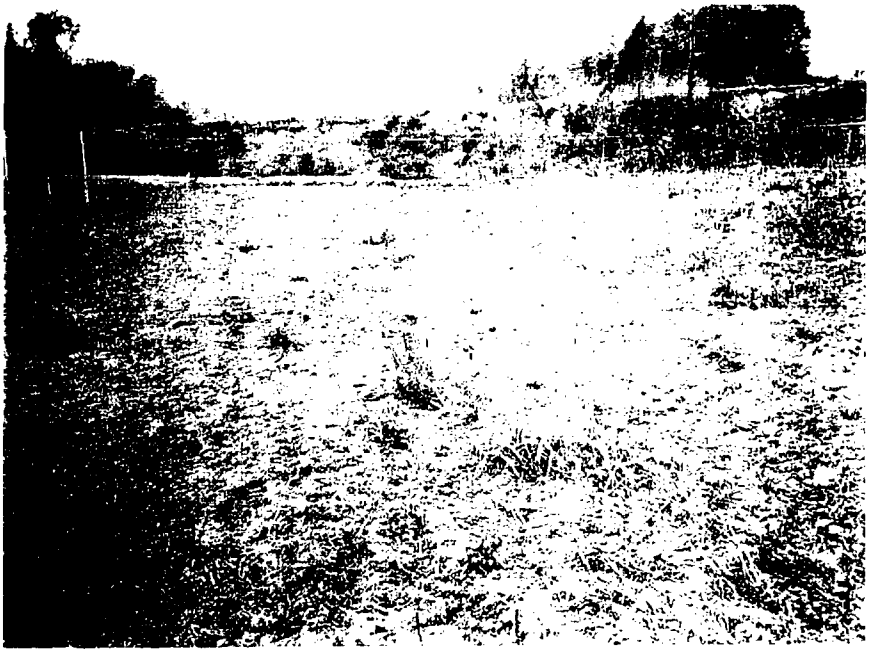
Photograph 41 Sampling Site Q-20

OFF-SITE AREAS

Photograph 42 Sampling Site OS-2



Photograph 43: Sampling Site OS-3



Photograph 44: Sampling Site OS-4

APPENDIX B

CHAIN OF CUSTODY FORMS

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client: AMEC Earth & Environmental	Project Manager: Chuck Harman	Date: 10/10/02	Chain of Custody Number: 085383
Address: 285 Davidson Ave	Telephone Number (Area Code)/Fax Number: 732-302-9500/9504	Lab Number:	Page 1 of 1
City: Somerset / State: NJ / Zip Code: 08873	Site Contact:	Lab Contact:	
Project Name and Location (State): Sunoco	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No:			

Sample I D No and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Insects	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Dioxins	Furans	Special Instructions/ Conditions of Receipt
IN Q1	10/10/02	0830					X							X	X	1 bottle / sample
IN Q2		0845					X							X	X	
IN OS1		1015					X							X	X	
IN ROS1		1030					X							X	X	
IN P1		1045					X							X	X	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Std.

QC Requirements (Specify):

	Date	Time		Date	Time
1 Relinquished By	10/10/02	1400	1 Received By		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments:

DISTRIBUTION WHITE - Stays with the Sample CANARY - Returned to Client with Report PINK - Field Copy

Serial Number 048017

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location
Phone:
Fax:

PROJECT REFERENCE	PROJECT NO.	PROJECT LOCATION (STATE)
Sanget		NJ
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Chuck Harman	732 302 9500	9504
CLIENT NAME	CLIENT E-MAIL	
AMEC Earth+Env.		
CLIENT ADDRESS		
285 Davidson Ave Somerset NJ 08873		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE 1 OF 1

STANDARD REPORT DELIVERY (X)
DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT, ..)	REQUIRED ANALYSIS: SVOC	REQUIRED ANALYSIS: Metals	REQUIRED ANALYSIS: pesticides	REQUIRED ANALYSIS: PCBs	REMARKS
		PRESERVATIVE			4°C							
10/10/02	0800	IN Q1			X			X	X	X	X	1 bottle/sample
	1030	IN BOS1			X				X		X	
	0845	IN Q2			X			X	X	X	X	
	1045	IN P1			X				X		X	

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS	10/10/02	1400						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

CLIENT'S FIELD COPY

Chain of Custody

amec Earth & Environmental, Inc.
AMEC San Diego Bioassay Laboratory
5550 Morehouse Drive, Suite B
San Diego, CA 92121
858-458-9044

Date 10-8-02 Page 1 of 1

Samples Collected by: Charles Hamilton

Company	AMEC
Address	285 Davidson Ave. Suite 140
City	Somerset State NJ Zip 08873
Contact	Charles Hamilton
Phone No	(732) 302-9500

Mail Report to (if different)

Company	
Address	
City	State Zip
Contact	
Phone No	

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS	ANALYSIS REQUIRED: Ethiconm Processing
Soil-0-3	10/4/2	1105	Soil	Bag	1		X
Soil-R-4	10/8/02	1610	Soil	Bag	1		X
Soil-R-1	10/5/02	0815	Soil	Bag	1		X
Soil-0-3	10/4/02	1410	Soil	Bag	1		X
Soil-C-2	10/4/02	1130	Soil	Bag	1		X

PROJECT INFORMATION	SAMPLE RECEIPT	
CLIENT	TOTAL NO OF CONTAINERS	
PO NO	CHAIN OF CUSTODY SEALS	
SHIPPED VIA	REC'D GOOD CONDITION/COLD	
	CONFORMS TO RECORD	

SPECIAL INSTRUCTIONS/COMMENTS.

RELINQUISHED BY	RELINQUISHED BY
(Signature) (Time)	(Signature) (Time)
(Printed Name) (Date)	(Printed Name) (Date)
(Company)	(Company)
RECEIVED BY	**RECEIVED BY (LABORATORY)**
(Signature) (Time)	(Signature) (Time)
(Printed Name) (Date)	(Printed Name) (Date)
(Company)	**AMEC Bioassay Lab Log-In No**

Additional disposal charges may apply.

DISTRIBUTION: WHITE, CANARY - AMEC Bioassay Lab, PINK - Originator

Chain of Custody

amec Earth & Environmental, Inc.
AMEC San Diego Bioassay Laboratory
5550 Morehouse Drive, Suite B
San Diego, CA 92121
858-458-9044

Date 10/5/02 Page 1 of 1

Samples Collected by: Charles Hamman

Company AMEC
Address 255 Davidson Ave Suite 100
City Somerset State NJ Zip
Contact Charles Hamman
Phone No. 732 302 9200

Mail Report to (if different)

Company
Address
City State Zip
Contact
Phone No.

ANALYSIS REQUIRED

Earthworm Bioassay

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS
Soil-R-2	10/5/02		Soil	Bag	1	
Soil-R-1	10/5/02		Soil	Bag	1	
Soil-R-5	10/5/02		Soil	Bag	1	
Soil-O-1	10/5/02		Soil	Bag	1	

PROJECT INFORMATION

CLIENT
P.O. NO
SHIPPED VIA

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS
CHAIN OF CUSTODY SEALS
REC'D. GOOD CONDITION/COLD
CONFORMS TO RECORD

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RECEIVED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RELINQUISHED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RECEIVED BY (LABORATORY)

(Signature) (Time)
(Printed Name) (Date)
AMEC Bioassay Lab Log-In No.

Additional disposal charges may apply.

DISTRIBUTION: WHITE, CANARY - AMEC Bioassay Lab, PINK - Originator

Chain of Custody

amec Earth & Environmental, Inc.
AMEC San Diego Bioassay Laboratory
5550 Morehouse Drive, Suite B
San Diego, CA 92121
858-458-9044

Date 10/9/02 Page 1 of 1

Samples Collected by: Charles Harman

Company AMEC
Address 285 Davidson Ave Suite 100
City Somerset State NJ Zip 08873
Contact Charles Harman
Phone No. (732) 302-9500

Mail Report to (if different)

Company
Address
City State Zip
Contact
Phone No.

ANALYSIS REQUIRED

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS	Eanthworm Bioassay
Soil-S-1	10/8/02	1135	Soil	Bag	1		X
Soil-OS-4	10/8/02	1505	Soil	Bag	1		X
Soil-R-3	10/8/02	1305	Soil	Bag	1		X
Soil-OS-2	10/8/02	1430	Soil	Bag	1		X

PROJECT INFORMATION

CLIENT
P.O. NO.
SHIPPED VIA:

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D. GOOD CONDITION/COLD	
CONFORMS TO RECORD	

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RECEIVED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RELINQUISHED BY

(Signature) (Time)
(Printed Name) (Date)
(Company)

RECEIVED BY (LABORATORY)

(Signature) (Time)
(Printed Name) (Date)
AMEC Bioassay Lab Log-In No.

Additional disposal charges may apply.

DISTRIBUTION: WHITE, CANARY - AMEC Bioassay Lab, PINK - Originator

Chain of Custody

Earth & Environmental, Inc.
AMEC San Diego Bioassay Laboratory
5550 Morehouse Drive, Suite B
San Diego, CA 92121
858-458-9044

Date 10/8/02 Page 1 of 1

Samples Collected by: Charles Harman

Company	AMEC
Address	65 Plaudren Hill Suite 100
City	Somerset State NJ Zip 08873
Contact	Charles Harman
Phone No.	(732) 302-9500

Mail Report to (if different)

Company	
Address	
City	State Zip
Contact	
Phone No.	

ANALYSIS REQUIRED

Perchlorate Wet Method

SAMPLE ID	DATE	TIME	MATRIX	CONTAINER TYPE	NUMBER OF CONTAINERS	COMMENTS	Perchlorate Wet Method
Soil-P-3	10/8/02	0930	Soil	Bag	1		X
Soil-P-2	10/8/02	0910	Soil	Bag	1		X
Soil-P-1	10/8/02	0815	Soil	Bag	1		X

PROJECT INFORMATION

CLIENT	Sanofi
PO NO	
SHIPPED VIA	

SAMPLE RECEIPT

TOTAL NO OF CONTAINERS	
CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDITION/COLD	
CONFORMS TO RECORD	

SPECIAL INSTRUCTIONS/COMMENTS:

RELINQUISHED BY		**RELINQUISHED BY**	
(Signature)	(Time)	(Signature)	(Time)
(Printed Name)	(Date)	(Printed Name)	(Date)
(Company)		(Company)	
RECEIVED BY		**RECEIVED BY (LABORATORY)**	
(Signature)	(Time)	(Signature)	(Time)
(Printed Name)	(Date)	(Printed Name)	(Date)
(Company)		**AMEC Bioassay Lab Log-in No.**	

Additional disposal charges may apply.

DISTRIBUTION: WHITE, CANARY - AMEC Bioassay Lab, PINK - Originator

[redacted]

Chain of Custody Record

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
Amec	Chuck Harman	10-9-02	085384
Address 285 Davidson Ave, Ste 100	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 2
City Somerset / **State** NJ / **Zip Code**	Site Contact Chuck Harman	Lab Contact Pola Hrebik	
Project Name and Location (State) Swigel Head TL	Carrier/Waybill Number		
Contract/Purchase Order/Quote No			

Sample I D No and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Oil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Other	Analysis (Attach list if more space is needed): Dioxin/Furans
PL-Q 16	10-1 02	0815					✓	✓							X
PL Q-15		0840													
PL Q-14		0900													
PL-Q-9		0921													
PL-Q 20		0940													
PL Q-19		1000													
PL-Q-11		1045													
PL Q 12		1100													
PL-Q-21		1105													
PL-Q 13		1120													
PL-Q 18		1215													
PL-Q-10		1140													

Special Instructions/ Conditions of Receipt

Possible Hazard Identification

☒ Non Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STD

QC Requirements (Specify)

	Date	Time		Date	Time
1 Relinquished By	10/9/02	1545	1 Received By		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments

DISTRIBUTION WHITE Stays with the Sample CANARY Returned to Client with Report PINK Field Copy

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (1200)

Client: Aerosc	Project Manager: Chuck Harman	Date: 10 9-02	Chain of Custody Number: 085385
Address: 285 Davidson Ave, Ste 100	Telephone Number (Area Code)/Fax Number:	Lab Number:	Page 2 of 2
City: Somerset / State: NJ / Zip Code: 08873	Site Contact: Chuck Harman	Lab Contact: Kathy Lobik	
Project Name and Location (State): August Harman 2 11	Carrier/Waybill Number: Air		
Contract/Purchase Order/Quote No:			

Sample I D No and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Oil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): Phenol/Furan
PL-Q-17	10-9-02	1235					X	X						

Special Instructions/ Conditions of Receipt

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other 5 7 D

QC Requirements (Specify):

	Date	Time		Date	Time
1 Relinquished By	10/9/02	1845	1 Received By		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments

DISTRIBUTION WHITE - Stays with the Sample CANARY Returned to Client with Report PINK Field Copy

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
Amec	Chuck Harman	10-8-02	085386
Address 285 Davidson Ave, Suite 100	Telephone Number (Area Code)/Fax Number	Lab Number	Page 1 of 2
City Somerset	**State** NJ	**Zip Code** 07945	Site Contact / Lab Contact
Project Name and Location (State)	Carrier/Waybill Number		
Contract/Purchase Order/Quote No			

Sample I D No and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Plant	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Dioxin/Furan	Special Instructions/ Conditions of Receipt
PL-P-1	10-8-02	0845					1	4						X	
PL-P-2		0910					1	5							
PL-P-3		0930					1	4							
PL-P-4		0815					1	5							
PL-O-1		1010					1	0							
PL-O-2		1030					1	0							
PL-O-3		1105					1	0							
PL-S-1		1135					1	1							
PL-R-1		1335					1	1							
PL-R-2		1550					1	1							
PL-R-3		1305					1	1							
PL-R-4		1610					1	0							

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STD

QC Requirements (Specify)

	Date	Time		Date	Time
1 Relinquished By	10/8/02	1705	1 Received By		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments

DISTRIBUTION WHITE - Stays with the Sample CANARY - Returned to Client with Report PINK - Field Copy

Chain of Custody Record

SEVERN TRENT SERVICES — **Severn Trent Laboratories, Inc.**

STL-4124 (1200)

Client	Project Manager	Date	Chain of Custody Number
Amec	Chuck Harmon	10-8-02	085387
Address 285 Davidson Ave, Ste. 100	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
City Somerset / **State** NJ / **Zip Code** 07445	Site Contact	Lab Contact	
Project Name and Location (State) Sunset Hvec 2 FL	Carrier/Waybill Number		
Contract/Purchase Order/Quote No			

Sample I D No and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: Diox/Furan	Special Instructions/ Conditions of Receipt
PL-R-5	10-8-02	1305					1						X	
PL-OS-2		1430					1							
PL-OS-3		1410					1							
PL-OS-4		1505					1							

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other STD

QC Requirements (Specify)

	Date	Time		Date	Time
1 Relinquished By	10/8/02	1705	1 Received By		
2 Relinquished By			2 Received By		
3 Relinquished By			3 Received By		

Comments

DISTRIBUTION WHITE - Stays with the Sample CANARY - Returned to Client with Report PINK - Field Copy

erial ber 018022

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah GA 31404

Website www.stl-inc.com
Phone (912) 354-7858
Fax (912) 352-0165

Alternate Laboratory Name/Location

Phone
Fax

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Sanjet Area 2		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO
Michelle Owens		
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
Chuck Norman	732 302 9500	
CLIENT NAME	CLIENT E MAIL	
AMEC		
CLIENT ADDRESS		
285 Davidson Ave Somerset, NJ		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE ____ OF ____

STANDARD REPORT DELIVERY X
DATE DUE ____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE ____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL SOLVENT)	REQUIRED ANALYSIS: SVOC	REQUIRED ANALYSIS: TAL Metal	REQUIRED ANALYSIS: Pest / Herb	REQUIRED ANALYSIS: PCBs	REMARKS
10/9/02	1100	PL-Q-12	X		X			X	X	X	X	Plant Tissue
	1105	PL-Q 21										
	1120	PL Q-13										
	1215	PL-Q-18										
	1140	PL Q-10										
↓	1235	PL Q 1.7										↓

PRESERVATIVE

NUMBER OF CONTAINERS SUBMITTED

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINER				10/09/02	1845			
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINER								

RECEIVED FOR LABORATORY BY (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO	CUSTODY SEAL NO	SUBSEQUENT REMARKS

CLIENT'S FIELD COPY

erial ıber 218021

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website www.stl-inc com
Phone (912) 354-7858
Fax (912) 352-0165

Alternate Laboratory Name/Location

Phone
Fax

PROJECT REFERENCE: Sauget Area 2	PROJECT NO	PROJECT LOCATION (STATE): IL	PAGE / OF
STL (LAB) PROJECT MANAGER: Michelle Owens	P.O. NUMBER	CONTRACT NO	STANDARD REPORT DELIVERY: X DATE DUE
CLIENT (SITE) PM: Chuck HARMAN	CLIENT PHONE: 732-302-9500	CLIENT FAX	EXPEDITED REPORT DELIVERY (SURCHARGE): DATE DUE: 9
CLIENT NAME: AMEC	CLIENT E-MAIL		
CLIENT ADDRESS: 285 Davidson Ave Somerset, NJ			NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2
COMPANY CONTRACTING THIS WORK (if applicable)			

PRESERVATIVE

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G) INDICATE	MATRIX: AQUEOUS (WATER)	MATRIX: SOLID OR SEMISOLID	MATRIX: AIR	MATRIX: NONAQUEOUS LIQUID (OIL, SOLVENT,)	REQUIRED ANALYSIS: SVOC	TAL Metal	Pest/Herb	PCBs	REMARKS
			NUMBER OF CONTAINERS SUBMITTED									
10/9/02	0815	PL-Q-16	X		X			X	X	X	X	Plant Tissue
"	0840	PL-Q-15	"		"			"	"	"	"	"
"	0900	PL-Q-14	"		"			"	"	"	"	"
"	0920	PL-Q-9	"		"			"	"	"	"	"
"	0940	PL-Q-20	"		"			"	"	"	"	"
"	1000	PL-Q-19	"		"			"	"	"	"	"
"	1045	PL-Q-11	"		"			"	"	"	"	"

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS				10/9/02	1645			
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

RECEIVED FOR LABORATORY BY: DATE

CLIENT'S FIELD COPY

Serial Number 348000

SEVERN TRENT SERVICES

STL Savannah

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website: www.stl-inc.com
Phone: (912) 354-7858
Fax: (912) 352-0165

Alternate Laboratory Name/Location

Phone
Fax:

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Sanger Area 2		
STL (LAB) PROJECT MANAGER	P.O. NUMBER	CONTRACT NO
CLIENT (SITE) PM	CLIENT PHONE	CLIENT FAX
AMEC	732.302.9500	
CLIENT NAME	CLIENT E-MAIL	
C. R. Harman		
CLIENT ADDRESS		
285 Davidson Ave, Suite		
COMPANY CONTRACTING THIS WORK (if applicable)		

PAGE ____ OF ____

STANDARD REPORT DELIVERY ☒

DATE DUE ____

EXPEDITED REPORT DELIVERY (SURCHARGE) ◯

DATE DUE ____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,)	REQUIRED ANALYSIS: SVOC	Metal	ACBs	Pest/Herb	NUMBER OF CONTAINERS SUBMITTED	REMARKS
10/8	0815	PL-P-4	X					✓	✓	✓	✓		Plant tissue samples
	0845	PL-P-1	X										
	0910	PL-P-2	X										
	0930	PL-P-3	X										
	1010	PL-O-1	X										
	1030	PL-O-2	X										
	1105	PL-O-3	X										
	1135	PL-S-1	X					✓	✓	✓	✓		
~~1305~~		~~PL-R-3~~											
~~1705~~		~~PL-A-5~~											

PRESERVATIVE

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			C R Harman	10/9/02	1700			
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								

RECEIVED FOR LABORATORY BY: DATE:

CLIENT'S FIELD COPY

Serial Number 0348v2

SEVERN TRENT SERVICES

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

STL Savannah

STL Savannah
5102 LaRoche Avenue
Savannah, GA 31404

Website www.stl-inc.com
Phone. (912) 354-7858
Fax· (912) 352-0165

( ) Alternate Laboratory Name/Location

Phone
Fax

PROJECT REFERENCE	PROJECT NO	PROJECT LOCATION (STATE)
Sanger Area 2		
STL (LAB) PROJECT MANAGER: Michelle Owens	P.O. NUMBER	CONTRACT NO
CLIENT (SITE) PM: C R HARMAN	CLIENT PHONE: 732-302-9500	CLIENT FAX
CLIENT NAME: AMEC	CLIENT E-MAIL	
CLIENT ADDRESS: 285 Davidson		
COMPANY CONTRACTING THIS WORK (if applicable)		

MATRIX TYPE (COMPOSITE (C) OR GRAB (G) INDICATE; AQUEOUS (WATER); SOLID OR SEMISOLID; AIR; NONAQUEOUS LIQUID (OIL, SOLVENT,))

REQUIRED ANALYSIS: Metals; SVOCs; Pest/Herb; PCBs

PAGE | OF

STANDARD REPORT DELIVERY (X)

DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )

DATE DUE

PRESERVATIVE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT: 2

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	COMPOSITE (C) OR GRAB (G)	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT,)	NUMBER OF CONTAINERS SUBMITTED: Metals	SVOCs	Pest/Herb	PCBs	REMARKS
10/8/02	1105	PL-R-3	X		X			X	X	X	X	Plant Tissue Samples
	1305	PL-R-5										
	1335	PL-R-L										
	1410	PL-OS-3										
	1430	PL-OS-2										
	1505	PL-OS-4										
	1550	PL-R-2										
↓	1610	PL-R-4						↓	↓	↓	↓	↓

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS			C R Harman	10/8/02	1705			
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
EMPTY CONTAINERS								
RECEIVED FOR LABORATORY BY:	DATE	TIME						

CLIENT'S FIELD COPY

APPENDIX C

VOLUME 4

TERRESTRIAL BIOTA SAMPLING PROJECT PLANS ADDENDUM

VOLUME 4

TERRESTRIAL BIOTA SAMPLING PROJECT PLANS

Revision 2 - Addendum

The following changes are noted in the Terrestrial Biota Sampling Project Plans (Volume 4), based on the results of the August 2, 2001 meeting with USEPA and follow-up discussions with Dr. James Chapman of the USEPA. This Addendum will constitute the only documentation of these changes and will be considered an incorporated part of the Volume 4 Sampling Project Plans. The changes are noted as follows:

1. Aside from qualitative descriptions made solely for purposes of site characterization, no vegetative community structure assessment will be made.

2. Eight additional soil samples will be collected from the southern end of Site Q. The locations of these samples will be verified during the field reconnaissance and will be biased towards areas of viable wildlife habitat. Soil samples from these locations will be collected from the surface interval (0 – 6" below ground) and will be analyzed for the standard parameters. Biological sampling (i.e., vegetative samples for residue analysis) will also be conducted at each of the eight locations.

3. Earthworms will no longer be collected from each of the surface soil locations throughout the five Sites. Instead, soil samples will be collected from each location and submitted to a laboratory for a 14-day earthworm toxicity/bioaccumulation test using laboratory provided earthworms (*Eisenia foetida*). Following the completion of the test, earthworms from the test will be analyzed in the laboratory for tissue residue. In place of the field collected earthworms, a composite sample of field collected terrestrial invertebrates (including beetles, crickets, and grasshoppers, slugs, snails and lepidopteran larvae). These organisms will be collected using sweep nets and other reasonable sampling methodologies. One composite sample from each soil sampling location will be submitted for laboratory analysis.

4. Biological sampling (including vegetative and invertebrate) will be conducted at those locations chosen for background surface soil sampling locations.